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UC Health
1111 Broadway, Suite 1400
Oakland, CA 94607
Phone: (510) 987-0147
http://www.ucop.edu

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UC Health Vice Chancellors
UC Health Chief Executive Officers

RE: Framework for Health Care Worker Vaccine Distribution Prioritization

Per recent discussions with the UC Health Coordinating Committee systemwide Bioethics working group, please reference the attached framework regarding health care worker vaccine distribution prioritization.

Please share this information as needed.

Sincerely,

Carrie Byington

Carrie Byington, MD
Executive Vice President
UC Health
@carrie_byington

cc: UCOP Management Review Team

University of California Framework for
Health Care Worker Vaccine Distribution Prioritization
As of December 16, 2020

Purpose: Provide a framework by which the University of California campuses can implement a program of vaccine allocation prioritization for health care workers.

Framework: The UC Health Coordinating Committee Bioethics Working Group based the following recommendations on a combination of committee deliberations, the NASEM report, the CDC MMWR article, and the California Interim Guidelines.

Ethical Principles:
The NASEM report cites the following foundational principles upon which the UCOP recommendations are based.

- **Maximum benefit**, which requires that we "...reduce the risks of severe morbidity and mortality caused by transmission due to SARS-CoV-2 for those (a) most at risk of infection and serious outcomes, for example, those in congregate living arrangements with comorbid conditions; (b) in roles considered to be essential for societal functioning; and (c) most at risk of transmitting SARS-CoV-2 to others. Individuals in the roles considered to be essential for societal functioning include those whose absence from their societal roles or work puts others and the society at risk of loss of needed goods and services if they become infected (e.g., physicians, nurses, other health care providers, first responders, workers employed in the food supply system, transportation workers, teachers, etc.)"[1] The NASEM report also highlights additional sources that articulate the rationale for prioritizing health care workers: "By virtue of their instrumental value in the pandemic response, health care workers and others who maintain critical infrastructure should be prioritized."[4]
- **Equal concern**
  - "...directs attention to the equal with and value of every person, protecting each person from discrimination". [1]
  - Also "...requires allocation and distribution by criteria that are non-discriminatory in design and impact. It excludes rationing based solely on characteristics such as religion, race, ethnicity, national origin, disabilities, and others. The moral right to equal concern requires allocation of vaccine to proceed impartially according to fair criteria".[1]
- **Mitigation of health inequities** --
  - "...address the higher risks faced by such persons in work environments and living arrangements that pose higher risk of transmitting and acquiring infection and with a higher prevalence of health problems that make it more likely that they will suffer severe outcomes and even die from COVID-19".[1] Examples given are (a) older adults in congregate settings, and (b) people of color.

- "Fundamental health inequities in COVID-19 and in other health conditions are rooted in structural inequalities, racism, and residential segregation. Any vaccine allocation framework designed to reduce COVID-19 risk must explicitly address the higher burden of COVID-19 experienced by the populations affected most heavily, given their exposure and compounding health inequities. Mitigating those health inequities is, therefore, a moral imperative of an equitable vaccine allocation framework." [1]
- "The committee's allocation criteria do so in part by taking into account the "vulnerability" of (i) People at increased risk of infection because of social conditions, such as crowded workplaces and multigenerational homes; and (ii) People at increased risk of severe outcomes because of comorbid conditions associated with social factors, limited access to health care, etc." [1]
- "A further way to mitigate the effects of health inequities is to incorporate a metric of social disadvantage, such as the Centers for Disease Control and Prevention's (CDC's) Social Vulnerability Index (SVI), the Area Deprivation Index (ADI), or the COVID-19 Community Vulnerability Index (CCVI), into the prioritization of vaccine recipients by making it an additional consideration (Schmidt, 2020)." [3] The framework does this by treating equity as a "crosscutting consideration" [1,2] -- "in each population group, vaccine access should be prioritized for geographic areas identified through CDC's Social Vulnerability Index or another more specific index." [1,2]

Ethical guidelines from the CDC's Advisory Committee on Immunization Practices (ACIP) COVID-19 Vaccines Working Group[2] were also reviewed, many of which were congruent with NASEM guidelines:

- **Maximize benefit and minimize harm**
- **Promote justice**
- **Mitigate health inequities**
- **Promote transparency**

Prioritization based upon risk categories:

The NASEM guidelines then offer "**risk-based criteria for operationalizing the foundational principles to achieve its goal**".[1] Individuals have **higher priority** to the extent that they are at greater…

- **Risk of acquiring infection**: Individuals have higher priority to the extent that they have a greater probability of being in settings where SARS-CoV-2 is circulating and of being exposed to a sufficient dose of the virus.

- **Risk of severe morbidity and mortality**: Individuals have higher priority to the extent that they have a greater probability of severe disease or death if they acquire infection.
- **Risk of negative societal impact**: Individuals have higher priority to the extent that societal function and other individuals' lives and livelihood depend on them directly and would be imperiled if they fell ill. ("Individuals in the roles considered to be essential for societal functioning include those whose absence from their societal roles or work puts others and the society at risk of loss of needed goods and services if they become infected (e.g., physicians, nurses, other health care providers, first responders, workers employed in the food supply system, transportation workers, teachers, etc.)."[1]
- **Risk of transmitting infection to others**: Individuals have higher priority to the extent that there is a higher probability of their transmitting the infection to others.

Defining "Health Care Worker/Health Care Personnel":

Prioritization of high-risk health care workers for phase "1a" vaccination allocation requires a clear definition of "Health Care Worker" or "Health Care Personnel" at high risk. Our definition is consistent with that developed by the CDC: *"Paid and unpaid persons serving in healthcare settings who have the potential for direct or indirect exposure to patients or infectious materials and are unable to work from home."*[2] Further, we also remain consistent with the NASEM definition where it is applicable to our particular circumstances: "*Frontline health care workers (who are in hospitals, nursing homes, or providing home care) who either (1) work in situations where the risk of SARS-CoV-2 transmission is higher, or (2) are at an elevated risk of transmitting the infection to patients at higher risk of mortality and severe morbidity. ...These groups include not only clinicians (e.g., nurses, physicians, respiratory technicians, dentists and hygienists) but also other workers in health care settings who meet the Phase 1a risk criteria (e.g., nursing assistants, environmental services staff, assisted living facility staff, long-term care facility staff, group home staff, and home care givers). The health care settings employing these workers who are at increased risk of exposure to the virus may also include ambulatory and urgent care clinics; dialysis centers; blood, organ, and tissue donation facilities; and outpatient clinics."* [1]

Allocation based upon risk for vaccine side effects:

Fever, headache and fatigue have occurred in the population receiving the vaccine in clinical trials. It will be important given this reality that distribution to high risk HCWs in the same areas does not occur, but rather a staggered approach so that personnel are still available in these areas during vaccine rollout. *We recommend that no more than approximately 30% of HCW in a particular unit or subspecialty be vaccinated in the same week.*

Prioritization:

Our starting point for vaccine distribution first considers "Risk of Acquiring Infection" in order to uphold the principle of maximizing benefit as outlined by NASEM. Again we follow the criteria for high-risk HCWs developed by NASEM: "*Situations associated with higher risk of transmission include caring for COVID-19 patients, cleaning areas where COVID-19 patients are admitted, treated and housed, and performing procedures with higher risk of aerosolization such as endotracheal intubation, bronchoscopy, suctioning, turning the patient to the prone position, disconnecting the patient from the ventilator, invasive dental procedures and exams, invasive specimen collection, and cardiopulmonary resuscitation. Additional groups include individuals distributing or administering the vaccine—especially in areas of higher community transmission—such as pharmacists, plasma and blood donation workers, public health nurses and other public health and emergency preparedness workers."* [1]

Areas of our health system campuses meeting the above criteria can then be prioritized based upon the potential groupings outlined below. Following this are **draft** schemes from UCI, UCSD, UCSF, and UCLA. These schemes are intended to be *examples only* as the Bioethics working group recognizes that there will be necessary adaptations of the framework based upon the unique properties of individual campuses.

Potential Groupings within Phase 1a:

- **Group 1: Highest Risk:** front line patient-facing clinical staff with close, prolonged, and repeated exposure to patients with COVID-19, or at increased risk of exposure due to prolonged close contact with patients of unknown COVID status. (Examples: clinical staff performing aerosol-generating procedures on untested patients; Respiratory Therapists, Personnel involved in testing for COVID, clinical staff frequently involved with resuscitation).

- **Group 2: High Risk:** front line patient-facing clinical staff treating patients with COVID-19 without prolonged and repeated close contact, or treating patients at high risk for complications, or treating large volumes of patients in-person with unclear COVID status. (Examples: clinical staff working on units with known COVID+ patients; clinical staff performing procedures on COVID-tested patients; high-volume clinical areas with many in-person visits).

- **Group 3: Moderate Risk:** front line patient-facing clinical and support staff who provide direct patient care with some risk of exposure, essential services to patient care.

- **Group 4: Other Risk:** front line clinical staff and support staff with some risk of exposure due to working in high-traffic areas, essential services to patient care. Other essential

administrative, leadership and education positions as well as groups of HCW in limited numbers such as Perfusionists.

Potential Group 1 scheme (UCI):

Priority A (0-X1 Vaccines)

HCWs (MDs/RNs) and support staff (e.g. Registration, Dedicated Ambassadors, etc.) in close (within 3-6 feet), prolonged and repeated contact with high-risk patients in high risk units.

- Emergency Department
- Dedicated Response Inpatient Units
  - Dedicated Clinical/Ancillary staff
    - ICUs
      - MICU/CVICU
      - SICU
      - Neuro ICU
    - Medical/Surgical Units
      - 3T
      - 4T
      - 5T
- SPPO
- Respiratory Therapy
- Occupational Health
- COVID-19 Testing Staff
- Specialty Physicians
  - ED
  - ID
  - Pulmonary
  - Anesthesiology
  - Trauma

- ICU
- Hospitalists
- OR

Potential Group 1 scheme (UCSD):

TIER 1: Highest Risk: front line patient-facing clinical staff with exposure to with patients COVID-19 or treating high risk patients for complications. Includes residents/fellows

ACUTE CARE	AMBULATORY
1. ED/Trauma/STEMI/Stroke/L&D	1. Urgent Care (includes COVID-19 testing sites)
2. Respiratory Therapy	2. Express Care
3. Intensive Care Units and COVID Units	3. Primary care IM, FM, Geriatrics, pediatrics
4. Behavioral Health Units	4. Pulmonary
5. Onc / BMT / SOT Units	5. ENT
6. Anesthesia	6. Ophthalmology
7. Procedural Areas (IR, GI, Pulmonary, Cardiology)	7. Cancer Care
8. Acute Dialysis	8. Outpatient Lab
9. EVS / Security	9. Pulmonary function lab
10. Medical Surgical Units	10. Cardiac Function Lab
11. Surgery	11. Eating disorder
12. Pharmacists responding to code blues	12. Speech Therapy
13. PT/OT	13. PT/OT
14. Radiology technicians	
15. Lab/Phlebotomists	

Potential Group 2 scheme (UCSF):

Group 2: High Risk: *front line patient-facing clinical staff treating patients with COVID-19 without prolonged and repeated close contact, or treating patients at high risk for complications, or treating large volumes of patients in-person with unclear COVID status. (Examples: clinical staff working on units with known COVID+ patients; clinical staff performing procedures on COVID-tested patients; high-volume clinical areas with many in-person visits).*

Oncology, Bone Marrow Transplant and Solid Organ Transplant Unit Providers and Staff • *All APPS, faculty, students, fellows, residents and staff for the following units:* o *14L* o *12L* o *11L* o *9L* o **Pediatric units- need to add**	*Cancer Center*
Perioperative services • All staff • *Includes Departments of Anesthesia, Surgery, Urology, Neurosurgery, and Orthopedics- All APPs, faculty, rotating students, fellows, residents*	*Primary care* • *All APPs, faculty, rotating students, fellows, residents, and staff for the following clinics:* • *Department of General Internal Medicine* • *Family medicine* • *Geriatrics* • *Pediatrics* • *HIV*
Procedural Areas • *All APPs, faculty, rotating students, fellows, residents, and staff for the following procedural areas:* o *Interventional Radiology* o *Gastrointestinal* o *Pulmonary* o *Cardiology*	*Cardiac Function Lab, Pulmonary Function Test, Sleep Lab - All APPs, faculty, rotating students, fellows, residents, and staff*
Medical / Surgical and TCU Units (non-COVID) • *All APPs, faculty, rotating students, fellows, residents, and staff*	*Other Medical & Surgery Specialties* • *All APPs, faculty, rotating students, fellows, residents, and staff*
Langley Porter Psychiatric Inpatient Unit • *All APPs, faculty, rotating students, fellows, residents, and staff*	*Outpatient Lab* • *All staff*
Inpatient consulting specialties with direct patient contact with COVID+ patients • *All providers, APPs, faculty, rotating students, fellows, residents, and staff*	
Phlebotomists	
Environmental services / security / police / transporters / valet	
Food and nutrition services	
COVID symptom screening staff	
Patient care assistants (if not vaccinated as part of unit-based vaccination	
Physical Therapy/Occupational Therapy/Speech Language Pathology who have not been vaccinated per criteria above	
Radiology Technicians	

Potential Group 1 and 2 scheme (UCLA):

<table>
<tr><th colspan="2">Group 1: Highest Risk Group</th></tr>
<tr><td colspan="2">DEFINITION: Front line clinical staff who care for patients with COVID-19 in high risk settings or who care for symptomatic patients* of unknown COVID status

<u>Group 1 will be further sub-prioritized with the following definitions:</u>
GROUP 1A DEFINITION: Front line patient-facing clinical staff with close, prolonged, and repeated exposure to patients with COVID-19, or at increased risk of exposure due to prolonged close contact with symptomatic* patients of unknown COVID status
GROUP 1B DEFINITION: Front line patient-facing clinical staff treating patients with COVID-19 without prolonged and repeated close contact, or treating patients or treating large volumes of symptomatic patients* within unknown COVID status

*influenza-like illness (ILI) symptoms</td></tr>
<tr><td colspan="2">NOTE: The list of departments/areas below is not listed by priority within the highest risk group. Vaccine prioritization within the highest risk group will be determined by [x].</td></tr>
<tr><th>Acute Care</th><th>Ambulatory</th></tr>
<tr><td rowspan="2">COVID cohort unit nursing staff:
• RRMC (4ICU, 7ICU, 7E, 8W)
• SMMC (4CW ICU, 5MN, 4MN)</td><td>Immediate Care</td></tr>
<tr><td>COVID-19 Drive Thru Testing Sites</td></tr>
<tr><td>Emergency Departments</td><td>CTRC (staff working with COVID-19 or suspected COVID-19 patients)</td></tr>
<tr><td>Respiratory Therapy</td><td>Venice Family Care</td></tr>
<tr><td>Internal Medicine*</td><td>Physicians & Nurse Practitioners who provide patient care at area SNFs</td></tr>
<tr><td>Anesthesiology*</td><td>Primary Care (direct patient contact)
(ILI patients)</td></tr>
<tr><td>Pulmonary*</td><td>Venice Family Care</td></tr>
<tr><td>Infectious Disease*</td><td>UCLA Health-employed hospitalists working at other institutions</td></tr>
<tr><td>Thoracic/ICU Nurse Practitioners</td><td>Study coordinators and investigators</td></tr>
<tr><td>Emergency Medicine* (including EM Operations)</td><td>ENT providers performing invasive procedures for patients with unknown COVID status</td></tr>
<tr><td>Clinical Microbiology Lab</td><td>Staff administering COVID-19 vaccines</td></tr>
<tr><td>Critical Care Transport</td><td>Head & Neck (providing care for patients with unknown COVID status)</td></tr>
<tr><td>ECMO/VAD Program</td><td>BSL-3 research staff actively working with live COVID-19 virus</td></tr>
<tr><td>Lift Team</td><td></td></tr>
<tr><td>Interventional Areas:
• Main Operating Room
• Radiology (CT/IR)</td><td></td></tr>
</table>

• PTU/PACU • MPU • TRU	
Surgery*	
Mobile Stroke Program	
Pediatrics: • Transport • Hospitalists • Critical Care • PICU	
RRMC 5FDU	
Labor & Delivery	
Perfusion	
NPH Residents/House Staff	
Psychiatry*	
PT/OT (inpatient)	
Security	
Interns/Residents	
Ambulance Transport	
Clinical Surveillance Team	
Rape Treatment Center	
Dialysis Nurses (inpatient)	
Environmental Services	
Head & Neck*	
Obstetrics	
Med/Surg Nurse Practitioners	
Resource Team (if caring for COVID patients)	

Additional prioritization considerations based upon other risk categories:

Further stratification and granularity may be necessary based upon limited supply of vaccine in the first several months of distribution. We propose the following additional considerations based upon this reality:

1. Vaccinate providers delivering the vaccine to others
2. Vaccinate up to 30% of one unit and move to another high-risk setting(s) for the rest of the week. Come *back* to that high-risk setting the following week for the next 30% of the HCWs and so forth.
3. *In the event of a protracted ability to obtain adequate inventory of vaccine our Bioethics working group recommends prioritizing further by factoring in an individual's age (addresses the principles of "risk of severe illness and mortality") and/or address or California Healthy Places Index (addresses the* "risk of societal impact" *and* "risk of transmitting infection to others").

a. Health systems can consider further groups by self-identifying HCW >65 years of age. Highest rates of hospitalizations and death from COVID-19 have been seen in the older population. Prioritization based upon age is another parameter that can be obtained through employee records.

b. Incorporating address/Area Deprivation Index/other social vulnerability markers takes into account the ethical principle of mitigating health inequities. Neighborhoods that are low-income, and have a large population of racial and ethnic minorities are been demonstrated to shoulder the most significant burden of COVID-19 infection, morbidity and mortality. Many of our campuses have modeled the precise location of the clustering of COVID-19 infection. Addresses can be obtained through employee records. If practical and feasible, Area Deprivation Index, or a similar metric, should be determined to further risk stratify.

Acceptance, Evaluation, and Monitoring of Vaccine Administration

Should we explicitly establish priorities within the broad category of 1A health care worker described above?

We recognize that the pandemic has placed a disproportionate burden on certain patients, particularly those over 65 and/or from socially-disadvantaged groups. Some localities in the US have decided to first vaccinate those health care workers from a high mortality risk category, such as starting with those greater than 65. Although we strongly and unanimously endorse the moral commitment to take account of health equity and mortality risk in pandemic control response, after much discussion and deliberation we decided to consider all health care workers as a single tier without further stratification by age and social vulnerability markers.

Our argument has three components:

- First, collecting and using information about additional COVID-19 risk factors, such as age, comorbidities, and zip codes/geocodes that might reveal certain social vulnerabilities, may have the counterproductive effect of harming those individuals identified. Privacy concerns may ensue. Data must be used with care; UC Human Resources has expressed concern about collection of such information.
- Second, based on the most recent information about vaccine availability, we believe that only a few weeks will separate the early waves of 1A health care workers offered vaccination, not many months. This consequently likely obviates the need for further risk stratification beyond just risk of exposure alone.
- Third, we believe that we can accomplish the goal of equity by careful monitoring of the success of the program. It will be critical to make certain that inequities do not develop between those who receive an early dose and those who do not, for example privileged professionals vs patient care assistants or environmental health workers. It will also be

critical for occupational health to continue monitoring the rate of occupation and non-occupational transmission among health care workers.

What is the role of monitoring?

Based on these considerations, we strongly recommend active monitoring of the success of our allocation scheme in meeting the goal of preventing Covid-19 transmission to health care workers and reducing the overall burden of disease. In collecting data about Covid-19 occurrence, we will use the demographic data mentioned above in a way that carefully protects the privacy of all workers. Doing this retrospectively will provide time to use these sensitive data with appropriate care.

Should vaccine hesitancy be considered?

A final consideration is vaccine hesitancy. Although it might be useful to survey health care workers about their intention to accept a vaccine if one is offered, to streamline administration of scarce vaccine, we decided that it would be preferable to offer the vaccine to all. Those who refuse initially because of concern about safety should be offered the opportunity to be vaccinated later, as data accumulates. It will be important to monitor the rates of vaccine acceptance and declination.

References

1. National Academies of Sciences, Engineering, and Medicine. 2020. Framework for equitable allocation of COVID-19 vaccine. Washington, DC: The National Academies Press. https://doi.org/10.17226/25917NASEM report.
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3. Schmidt, H. 2020. The way we ration ventilators is biased. The New York Times, April 15, 2020. https://www.nytimes.com/2020/04/15/opinion/covid-ventilator-rationing-blacks.html (accessed September 22, 2020).
4. Emanuel, E. J., G. Persad, R. Upshur, B. Thome, M. Parker, A. Glickman, C. Zhang, C. Boyle, M. Smith, and J.P. Phillips. 2020. Fair allocation of scarce medical resources in the time of COVID-19. *New England Journal of Medicine* 382: 2049-2055. doi:10.1056/NEJMsb2005114
5. California Department of Health and Human Services, California Department of Public Health, *Community Vaccine Advisory Committee Meeting #2*, November 30, 2020.